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APPLICATION NO. FILING DATE FIRST NAMED INVENTOR ATTORNEY DOCKET NO. CONFIRMATION NO. 09/941,339 08/29/2001 Frank Muller-Rinke 054821-0837 5922 EXAMINER 26371 08/02/2004 7590 FOLEY & LARDNER CREPEAU, JONATHAN 777 EAST WISCONSIN AVENUE ART UNIT PAPER NUMBER **SUITE 3800** MILWAUKEE, WI 53202-5308 1746

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
	09/941,339	MULLER-RINKE, FRANK
Office Action Summary	Examiner	Art Unit
	Jonathan S. Crepeau	1746
The MAILING DATE of this communication a		vith the correspondence address
Period for Reply A SHORTENED STATUTORY PERIOD FOR REF THE MAILING DATE OF THIS COMMUNICATION - Extensions of time may be available under the provisions of 37 CFR after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a r - If NO period for reply is specified above, the maximum statutory perion - Failure to reply within the set or extended period for reply will, by state Any reply received by the Office later than three months after the mail earned patent term adjustment. See 37 CFR 1.704(b).	N. 1.136(a). In no event, however, may a eply within the statutory minimum of th od will apply and will expire SIX (6) MC ute, cause the application to become A	reply be timely filed irty (30) days will be considered timely. NNTHS from the mailing date of this communication. ABANDONED (35 U.S.C. § 133).
Status		
1) Responsive to communication(s) filed on 18 2a) This action is FINAL. 2b) The Triple Tripl	nis action is non-final. vance except for formal ma	•
Disposition of Claims		
4) ⊠ Claim(s) <u>1-14</u> is/are pending in the application 4a) Of the above claim(s) is/are withden 5) □ Claim(s) is/are allowed. 6) ⊠ Claim(s) <u>1-14</u> is/are rejected. 7) □ Claim(s) is/are objected to. 8) □ Claim(s) are subject to restriction and	rawn from consideration.	
Application Papers		
9) The specification is objected to by the Examination 10) The drawing(s) filed on is/are: a) and a compared a control of the specific and a control	ccepted or b) objected to ne drawing(s) be held in abeya ection is required if the drawin	ance. See 37 CFR 1.85(a). g(s) is objected to. See 37 CFR 1.121(d).
Priority under 35 U.S.C. § 119		
12) Acknowledgment is made of a claim for foreign a) All b) Some * c) None of: 1. Certified copies of the priority docume 2. Certified copies of the priority docume 3. Copies of the certified copies of the priority docume application from the International Bure * See the attached detailed Office action for a list	nts have been received. nts have been received in a iority documents have been eau (PCT Rule 17.2(a)).	Application No n received in this National Stage
Attachment(s) 1) Notice of References Cited (PTO-892) 2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/0 Paper No(s)/Mail Date 5-18-04.	Paper No	Summary (PTO-413) (s)/Mail Date Informal Patent Application (PTO-152)

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DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 1-14. Although the rejection under 35 USC §102 has been obviated, claims 1-14 remain rejected for the reasons of record under 35 USC §103. Accordingly, this action is made final.

Claim Rejections - 35 USC § 103

2. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over DE 19804423 in view of EP 899801.

Regarding claim 8, DE '423 is directed to a lead acid battery having a container, a positive electrode, a negative electrode, and an electrolyte (see abstract; first page of translation). Regarding claims 1 and 8, the battery comprises separators having a plurality of main ribs arranged at regular intervals on the outside (top) surface thereof (see Figure 3). The outermost main ribs (corresponding to the claimed "additional ribs") are located in the vicinity of the edge of the separator. A negative electrode (4) is positioned on the opposite side of the separator (see Figure 3; page 3 of the translation). Regarding claims 2 and 9, the additional ribs are arranged symmetrically with respect to the main ribs (see Figure 3). Regarding claims 3 and 10, all the ribs are integral with the separator base sheet (see Fig. 2).

DE '423 does not expressly teach that the separator comprises a plurality of shorter reinforcing ribs in the area of the lateral edge portions, as recited in claims 1 and 8, or that the

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additional ribs are located "in the region of the reinforcing ribs" (claim 1) or "in each of the areas of the lateral edge portions" (claim 8). The reference further does not expressly teach that the positive electrode comprises an expanded metal grid having lateral edge portions having open cut edges, as recited in claims 4 and 11, or the heights of the main, additional, and reinforcing ribs, as recited in claims 5-7 and 12-14.

EP '801 is directed to a lead-acid battery comprising a separator that comprises a plurality of main ribs (24) and plurality of small reinforcing ribs (26A,B) on the lateral edge portions thereof (see Fig. 1). Further, the reference teaches that prior art separators have thicknesses of between 0.006-0.015 inches (0.15-0.38 mm) (see paragraph 2), and that the reinforcing ribs have a radius (i.e., height) of 0.008-0.012 inches (0.203-0.305 mm) (see paragraph 10).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use small reinforcing ribs in an area surrounding the additional ribs of the separator of DE '423. In paragraph 4, EP '801 teaches that "the closely spaced ribs and concave furrows therebetween provide significant resistance to gridwire puncture." Thus, the artisan would be motivated to incorporate the reinforcing ribs of EP '801 in an edge region of the separator of DE '423, i.e., in a region surrounding the "additional" ribs, to reduce puncturing of the gridwire of the positive electrode. It should be noted that although DE '423 does not expressly teach electrode grids, such grids are conventional in lead-acid batteries and could reasonably be expected to be present

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in the electrodes of DE '423. Additionally, such grids would have "open cut edges," as taught in paragraph 3 of EP '801.

Furthermore, the disclosure of EP '801 would be sufficient to render the height ranges recited in claim 5-7 and 12-14 obvious to a skilled artisan. Regarding the thickness of the base sheet of EP '801, the artisan would be motivated to use the prior art thickness (0.15-0.38 mm) disclosed in paragraph 2. This range encompasses the claimed range of 0.15-0.25 mm, thereby rendering the range obvious. Regarding the height of the reinforcing ribs, the reference suggests a low value of 0.203 mm, which would render obvious the claimed range of "approximately 0.1-0.2 mm." Regarding the claimed height of the main and additional ribs (0.45-1.75 mm), the artisan would be motivated use a value within the range because these ribs must be taller than the reinforcing ribs. Accordingly, each of the ranges recited in claims 5-7 and 12-14 would be rendered obvious by the disclosure of EP '801.

Response to Arguments

Applicant's arguments filed May 18, 2004 have been fully considered but they are not persuasive. Applicants assert that "[t]he suggestion to make the combination of Kasner et al. [DE '423] and Hercamp et al. [EP '801] has been taken from the Applicants' own specification (using hindsight), which is improper." In response, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the

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time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, it is believed that the secondary reference (Hercamp et al.) provides sufficient motivation to incorporate its reinforcing ribs into the separator of Kasner et al. Thus, it is believed that the references fairly suggest the claimed invention without the benefit of hindsight. As such, it is believed that the rejection under 35 USC §103 is proper.

Conclusion

4. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr, can be reached at (571) 272-1414. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jonathan Crepeau Patent Examiner Art Unit 1746 July 29, 2004